SUMMARY of
POINT OF IMPINGEMENT STANDARDS, POINT OF IMPINGEMENT GUIDELINES, and AMBIENT AIR QUALITY CRITERIA (AAQCs)

(Sorted by CAS Number)

STANDARDS DEVELOPMENT BRANCH
ONTARIO MINISTRY OF THE ENVIRONMENT

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INTRODUCTION:

In Ontario, the enabling legislation for the Point of Impingement Standards is Regulation 346 (formerly Regulation 308) of the *Environmental Protection Act*. Regulation 346 should be consulted for application of the Point of Impingement Standards. Desirable Ambient Air Quality Criteria are defined in Regulation 337 (formerly Regulation 296) under the *Environmental Protection Act*. This document contains three tables:

- Table 1 - Sample Calculation for Toxicity Equivalent Values for Chlorinated Dioxin and Furan compounds
- Table 2 - Point of Impingement (POI) Limits and Ambient Air Quality Criteria (AAQC)
- Table 3 - Future Effects-based POI limits with current interim values subject to Risk Management Framework for Air Standards (currently under development)

NOTES TO TABLE USERS:

1) When an entry in the 'Status' column is given as 'CARC' (ie. CARCINOGEN), it is implied that there is no assigned standard or guideline. Emissions to the environment are to be prevented or limited to the greatest extent possible.

2) In the 'Status' column (ie. Table 2) when entries include the "#" symbol then the status of the Standard/Guideline is interim, pending the development of a Risk Management (RM) Framework for Air Standards that will address implementation issues such as time, technology and/or economics. Table 3 provides the future effects-based POI limits which will replace the current standard/guideline with interim status, subject to the RM framework.

3) In the 'AAQC Limiting Effect' column (ie. Table 2) when entries are separated by a semi-colon (eg. odour;health;odour for the contaminant butanol, n-) then these apply consecutively to the numbers in that row (ie. 770, 15000 and 3100 respectively); entries separated by 'and' generally apply to a single number which protects against both effects listed.

4) There are several regulations pertaining to ozone depleting substances. Ozone depleting substances are those substances governed by Part VI of the Environmental Protection Act (EPA) (1992) and regulations under the Act (ie. Regulations 851/93; Regulation 189/94). The chlorofluorocarbons (CFCs) in Part VI of the EPA are referenced in the list of AAQCs as "Part VI EPA" and are included for information purposes. The refrigerant regulation (Regulation 189/94) deals with all CFCs, HCFCs, and HFCs.

5) **Calculation of TEQ (Toxicity Equivalent)**

International toxicity equivalency factors (I-TEFs) are applied to 17 dioxin and furan isomers of concern to convert them into 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin) toxicity equivalents. The conversion involves multiplying the concentration of the isomer by the appropriate I-TEF to yield the TEQ for this isomer. Summing the individual TEQ values for each of the isomers of concern provides the total toxicity equivalent level for the sample mixture.

A table listing the 17 isomers of concern and their I-TEFs can be found in the MOEE publication titled: Environment Information - Dioxins & Furans; PIBS 681b, revised 08/91 or in the example provided in Table 1.

Table 1 - Sample Calculation for Toxicity Equivalent Values for Chlorinated Dioxin and Furan compounds

Dioxin/Furan Isomers of Concern	International Toxicity Equivalency Factors (I-TEFs)	Concentration pg/m^3 (Analytically measured)	Toxicity Equivalent (TEQ) pg TEQ/m^3
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1	0.01	0.01
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.5	0.011	0.0055
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.006	0.0006
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.01	0.001
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1	0.019	0.0019
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.01	0.15	0.0015
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	0.001	-	-
2,3,7,8-Tetrachlorodibenzofuran	0.1	0.11	0.011
2,3,4,7,8-Pentachlorodibenzofuran	0.5	0.033	0.0165
1,2,3,7,8-Pentachlorodibenzofuran	0.05	0.024	0.0012
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1	0.03	0.003
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1	0.016	0.0016
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1	0.016	0.0016
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1	0.007	0.0007
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01	0.047	0.00047
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01	0.008	0.00008
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	0.001	-	-
TOTAL TOXICITY EQUIVALENT			**0.05665***

* Sum of toxicity equivalents of individual isomers.

The I-TEF scheme is intended to be used with isomer specific analytical results.

Table 2 - Point of Impingement (POI) Limits and Ambient Air Quality Criteria (AAQC) - Sorted by CAS number

Contaminant Name	Point of Impingement (POI) Limit				Ambient Air Quality Criteria (AAQC)				
	Contaminant Code or CAS No.	Half-hour POI Limit ($\mu g/m^3$)	POI Limiting Effect	Status	Annual ($\mu g/m^3$)	24-Hour ($\mu g/m^3$)	1-Hour ($\mu g/m^3$)	10-Minute ($\mu g/m^3$)	AAQC Limiting Effect
Formaldehyde	50-00-0	65	Odour	S		65			Health
Benzo(a)pyrene - single source	50-32-8	0.0033	Health	G	0.00022	0.0011			Health
Benzo(a)pyrene, all sources	50-32-8				0.0003				Health
Haloperidol	52-86-8	0.3	Health	G		0.1			Health
Nitrosodiethylamine, N-	55-18-5			CARC					Health
Nitrogylcerin	55-63-0	10	Health	G		3			Health
Carbon tetrachloride	56-23-5	7.2	Health	G		2.4			Health
Tributyltin oxide	56-35-9	0.42	Health	G		0.14			Health
Propylene glycol	57-55-6	100	Health	G		120			Health
Chlordane	57-74-9	15	Health	G		5			Health
Lindane (Hexachlorocyclohexane)	58-89-9	15	Health	G		5			Health
Ethylenediaminetetra acetic acid	60-00-4	100		G		120			Particulate
Ethyl ether	60-29-7	7000	Interim [a]	S[a]		8000		950	Health; Odour
Thiourea	62-56-6	60	Health	G		20			Health
Nitrosodimethylamine, N-	62-75-9			CARC					Health
Ethanol (Ethyl alcohol)	64-17-5	19000	Odour	G			19000		Odour
Formic acid	64-18-6	1500	Health	S		500			Health
Acetic acid	64-19-7	2500	Odour	S		2500			Odour
Benzoic acid	65-85-0	2100	Health	G		700			Health
Methanol (Methyl alcohol, Wood alcohol)	67-56-1	12000	Health	S		4000			Health
Propanol, iso- (Isopropyl alcohol, Isopropanol)	67-63-0	24000	Odour	G		24000			Odour
Acetone	67-64-1	48000	Odour	S		48000			Odour
Chloroform	67-66-3	300	Interim [a]	S[a]	0.2	1			Health
Dimethyl sulfoxide	67-68-5	6300	Health	G		2100			Health
Propanol, n- (Propyl alcohol)	71-23-8	48000	Health	G		16000			Health
Butanol, n-	71-36-3	2278	Odour	G		770	15000	3100	Odour; Health; Odour
Benzene	71-43-2			CARC					Health
Trichloroethane, 1,1,1,- (Methyl chloroform)	71-55-6	350000	Health	S		115000			Health
Methoxychlor	72-43-5	100	Particulate	G		120			Particulate
Methyl bromide	74-83-9	4000	Health	G		1350			Health
Ethylene	74-85-1			UD		40			Vegetation
Acetylene	74-86-2	56000	Odour	S		56000			Odour
Methyl chloride	74-87-3	20000	Health	G		7000			Health
Monomethyl amine	74-89-5	25	Odour	S		25			Odour
Hydrogen cyanide	74-90-8	1150	Health	S		575			Health
Mercaptans (as Methyl mercaptan) -total	74-93-1	20	Odour	S			20		(A) Odour
Vinyl chloride	75-01-4	3	Health	G	0.2	1			Health

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Acetaldehyde	75-07-0	500	Health	G		500			Health
Methylene chloride	75-09-2	5300	Interim [e]	G[e]	44	220			Health;Health
Methylene iodide	75-11-6	195	Health	G		65			Health
Carbon disulphide	75-15-0	330	Odour	S		330			Odour
Dimethyl sulphide	75-18-3	30	Odour	S			30		Odour
Calcium carbide	75-20-7	20	Corrosion	G		10			Corrosion
Ethylene oxide	75-21-8	15	Health	G		5			Health
Bromoform	75-25-2	165	Health	G		55			Health
Dichloroethane, 1,1-	75-34-3	600	Health	G		200			Health
Vinylidene chloride (1,1- Dichloroethene)	75-35-4	30	Health	S		10			Health
Phosgene	75-44-5	130	Health	S		45			Health
Chlorodifluoromethane (Freon 22)	75-45-6	1050000	Health	G		350000			Health
Trimethyl amine	75-50-3	0.5	Odour	G			0.5		Odour
Propylene oxide	75-56-9	450	Interim [e]	S[e]	0.3	1.5			Health; Health
Bromotrifluoromethane (Halon 1301)	75-63-8	see	"Part VI/EPA"						Ozone depleting
Butanol, tertiary	75-65-0			UD		30300			Health
Trichlorofluoromethane	75-69-4	18000	Health	G		6000	see "Part VI/EPA"	Health	
Difluorodichloromethane (Freon 12)	75-71-8	1500000	Health	G		500000	see "Part VI/EPA"	Health	
Trifluoroacetic acid	76-05-1	45	Health	G		15			Health
Trifluorotrichloroethane	76-13-1	2400000	Health	S		800000	see "Part VI/EPA"	Health	
Dichloro-1,1,2,2, - tetrafluoroethane, 1,2, (Freon 114)	76-14-2	2100000	Health	G		700000	see "Part VI/EPA"	Health	
Chloropentafluoroethane (CFC-115)	76-15-3	see	"Part VI/EPA"						Ozone depleting
Hexachlorocyclopentadiene	77-47-4	6	Health	G		2			Health
Dibutyltin dilaurate	77-58-7	100	Health	G		30			Health
Citric acid	77-92-9	100	Particulate	G		120	300		Health and Particulate
Trimethylol propane	77-99-6	100	Health	G		1250			Health
Butanol, iso-	78-83-1	1940	Odour	G		655	15000	2640	Odour; Health; Odour
Propylene dichloride	78-87-5	2400	Odour	S		2400			Odour
Methyl ethyl ketone (2-Butanone)	78-93-3	30000	Interim [e]	S[e]		1000			Health
Trichloroethylene	79-01-6	3500	Interim [e]	S[e]	23	115			Health
Acrylamide	79-06-1	45	Health	S		15			Health
Methacrylic acid	79-41-4	2000	Odour	G		2000			Odour
Methyl methacrylate	80-62-6	860	Odour	S		860			Odour
Warfarin	81-81-2	30	Health	G		10			Health
Ethylanthraquinone, 2-	84-51-5	30	Health	G		10			Health
Diethyl phthalate (DEP)	84-66-2	100	Health	G		125			Health
Dibutyl phthalate (DBP,di-n-butyl phthalate)	84-74-2	100	Health	G		50			Health

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	Contaminant Code or CAS No.	Half-hour POI Limit (µg/m³)	POI Limiting Effect	Status	Annual (µg/m³)	24-Hour (µg/m³)	1-Hour (µg/m³)	10-Minute (µg/m³)	AAQC Limiting Effect
Dihexyl phthalate (DHP)	84-75-3	100	Health	G		50			Health
Diquat dibromide -respirable	85-00-7	0.096	Health	G		0.032			Health
Diquat dibromide -total in ambient air	85-00-7	0.48	Health	G		0.16			Health
Phthalic anhydride	85-44-9	100	Particulate	S		120			Particulate
Butyl benzyl phthalate	85-68-7	450	Health	G		150			Health
Pentachlorophenol	87-86-5	60	Health	G		20			Health
Naphthol, alpha-	90-15-3	100	Health	G		100			Health
Naphthalene	91-20-3	36	Odour	G		22.5		50	Health; Odour
Dichlorobenzidine, 3,3-	91-94-1			CARC					Health
Biphenyl	92-52-4	60	Odour	G			60		Odour
Benzothiazole	95-16-9	200	Health	G		70			Health
Dichlorobenzene, ortho-	95-50-1	37000	Health	G			30500		Health
Trimethylbenzene, 1,2,4-	95-63-6	500	Odour	G		1000			Odour and Health
Methyl acrylate	96-33-3	4	Odour	S			4		Odour
Furfuryl alcohol	98-00-0	3000	Health	S		1000			Health
Furfural	98-01-1	1000	Odour	S			1000		Odour
Isopropyl benzene	98-82-8	100	Odour	S		400			Health
Methyl styrene, alpha	98-83-9			UD			24000		Health
Acetophenone	98-86-2	625	Odour	G			1167	850	Health and Odour
Benzoyl chloride	98-88-4	350	Health	G		125			Corrosion and Health
Ethyl benzene	100-41-4	3000	Health[e]	S[e]		1000		1900	Health; Odour
Styrene	100-42-5	400	Odour	S		400			Health
Benzyl alcohol	100-51-6	2640	Health	G		880			Health
Methylene-bis-2-chloroaniline, 4,4-	101-14-4	30	Health	G		10			Health
Methane diphenyl diisocyanate (MDI)	101-68-8	3	Health	G		1			Health
Methylene dianiline	101-77-9	30	Health	G		10			Health
Ethyl hexanol, 2-	104-76-7	600	Odour	G			600		Odour
Dichlorobenzene, para-	106-46-7	285	Health	G		95			Health
Quinone	106-51-4	45	Health	G		15			Health
Allyl glycidyl ether	106-92-3	180	Health	G		60			Health
Ethylene dibromide	106-93-4	9	Health	G		3			Health
Acrolein	107-02-8	28	Health	G			23.3		Health
Ethylene dichloride	107-06-2	6	Health	G	0.4	2			Health
Acrylonitrile	107-13-1	180	Interim[e]	S[e]	0.12	0.6			Health
Ethylene glycol	107-21-1					12700			Health
Hexylene glycol	107-41-5	14400	Health	G			12000		Health
Propylene glycol methyl ether	107-98-2	89000	Odour	G		30000		121000	Odour; Odour
Methyl isobutyl ketone	108-10-1	1200	Odour	S		1200			Odour
Isopropyl ether	108-20-3	220	Odour	G		110000			Health
Isopropyl acetate	108-21-4	1470	Odour	G		500		2000	Odour; Odour

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Maleic anhydride	108-31-6	100	Health	G		30			Health
Metaldehyde (Acetaldehyde tetramer)	108-62-3	100	Particulate	G		120			Particulate
Propylene glycol monomethyl ether acetate	108-65-6	5000	Odour	G		5000			Odour
Diisobutyl ketone	108-83-8	470	Odour	G		3500		649	Health; Odour
Toluene	108-88-3	2000	Odour	S		2000			Odour
Monochlorobenzene	108-90-7	4200	Health	G			3500	4500	Health; Odour
Phenol	108-95-2	100	Health	S		100			Health
Dimethyl-1,3-diamino propane, N,N-	109-55-7	60	Health	G		20			Health
Propyl acetate, n-	109-60-4	900	Odour	G		6600			Health
Methylal	109-87-5	18000	Health	G		6200			Health
Diethyl amine	109-89-7			UD			2910		Health
Tetrahydrofuran	109-99-9	93000	Odour	S		93000			Odour
Methyl-2-hexanone, 5-	110-12-3	460	Odour			160		630	Odour
Isobutyl acetate	110-19-0	1220	Odour	G		412		1660	Odour; Odour
Methyl-n-amyl ketone	110-43-0			UD		4600			Health
Hexane	110-54-3	35000	Health	G		12000			Health
Ethylene glycol ethyl ether (Cellosolve)	110-80-5	800	Odour	G		380		1100	Health;Odour
Cyclohexane	110-82-7	300000	Health	G		100000			Health
Pyridine	110-86-1	60	Odour	G		150		80	Health; Odour
Ethylene glycol ethyl ether acetate (Cell.ace.)	111-15-9	220	Odour	G		540		300	Health;Odour
Glutaraldehyde	111-30-8	42	Health	G		14	35		Health
Hexamethyleneimine	111-49-9	945	Health	G		315			Health
Octane	111-65-9	45400	Odour	G		15300		61800	Odour; Odour
Ethylene glycol butyl ether (Butyl cellosolve)	111-76-2	350	Odour	G		2400		500	Health;Odour
Diethylene glycol monomethyl ether	111-77-3	800	Odour	G		1200			Health
Diethylene glycol monoethyl ether	111-90-0	800	Odour	G		273		1100	Odour
Dibutyl amine	111-92-2			UD			2645		Health
Ethylene glycol butyl ether acetate (But.cell.ace)	112-07-2	500	Odour	G		3250		700	Health;Odour
Diethylene glycol monoethyl ether acetate	112-15-2					1800			Health
Ethylene glycol monohexyl ether	112-25-4					2500			Health
Diethylene glycol monobutyl ether	112-34-5					65			Health
Oleic acid	112-80-1	6	Health	G			5		Health
Dimethyl ether	115-10-6	2100	Odour	G		2100			Odour
Diethylhexyl phthalate (DEHP)	117-81-7	100	Health	G		50			Health
Dioctyl phthalate	117-84-0	100	Particulate	S		120			Particulate

Contaminant Name	Point of Impingement (POI) Limit				Ambient Air Quality Criteria (AAQC)				
	Contaminant Code or CAS No.	Half-hour POI Limit ($\mu g/m^3$)	POI Limiting Effect	Status	Annual ($\mu g/m^3$)	24-Hour ($\mu g/m^3$)	1-Hour ($\mu g/m^3$)	10-Minute ($\mu g/m^3$)	AAQC Limiting Effect
Methyl salicylate	119-36-8	300	Health	G		100			Health
Mercaptobenzothiazole disulphide	120-78-5	100	Particulate	G		120			Particulate
Trichlorobenzene, 1,2,4-	120-82-1	100		G		400			Health
Malathion	121-75-5	100		G		120			Particulate
Diphenylamine	122-39-4	50	Health	G		17.5			Health
Propionaldehyde	123-38-6	7	Odour	G		2.5		10	Odour; Odour
Diacetone alcohol	123-42-2	990	Odour	G		335		1350	Odour
Propionic anhydride (as Propionic acid)	123-62-6	100	Odour	G			100		Odour
Butyl acetate, n-	123-86-4	735	Odour	G		248	15000	1000	Odour; Health; Odour
Dioxane	123-91-1			UD		3500			Health
Amyl acetate, iso-	123-92-2					53200			Health and Odour
Butyl stearate	123-95-5	100	Particulate	G		120			Particulate
Adipic acid	124-04-9	3500	Health	G		1167			Health
Hexamethylenediamine	124-09-4	48	Health	G		16			Health
Diethylene glycol monobutyl ether acetate	124-17-4					85			Health
Decane, n	124-18-5			UD			60000		Health and Odour
Dimethyl amine	124-40-3			UD			1840		Health and Odour
Dibromotetrafluoroethane (Halon 2402)	124-73-2	see	"Part VI/EPA"						Ozone depleting
Perchloroethylene	127-18-4	10000	Interim [#]	G[#]		360			Health
Dimethyl acetamide, N,N-	127-19-5	900	Health	G		300			Health
Dalapon sodium salt	127-20-8	100	Health	G		50			Health
Dimethyl phthalate (DMP)	131-11-3	100	Health	G		125			Health
Dicapryl phthalate	131-15-7	100		S		120			Particulate
Captan	133-06-2	75	Health	G		25			Health
Chloramben	133-90-4	100	Particulate	G		120			Particulate
Tetramethyl thiuram disulphide	137-26-8	30	Health	G		10			Health
Nitrilotriacetic acid	139-13-9	100	Health	S		120			Particulate
Ethyl acrylate	140-88-5	4.5	Odour	S			4.5		Odour
Butyl acrylate	141-32-2	100	Particulate	G		120			Particulate
Ethyl acetate	141-78-6	19000	Odour	S			19000		Odour
n-Heptane	142-82-5	33000	Health	S		11000			Health
Sodium cyanide	143-33-9	100	Particulate	G		120			Particulate
Oxalic acid	144-62-7	75	Health	G		25			Health
Potassium cyanide	151-50-8	100		G		120			Particulate
Dichloroethylene, cis-1,2-	156-59-2	315	Health	G		105			Health
Dichloroethylene, trans-1,2-	156-60-5	315	Health	G		105			Health

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	Contaminant Code or CAS No.	Half-hour POI Limit (µg/m³)	POI Limiting Effect	Status	Annual (µg/m³)	24-Hour (µg/m³)	1-Hour (µg/m³)	10-Minute (µg/m³)	AAQC Limiting Effect
Aluminum distearate	300-92-5	100	Particulate	G		2180			Health
Bromacil	314-40-9	30	Health	G		10			Health
Diazinon	333-41-5	9	Health	G		3			Health
Cyanogen chloride	506-77-4	15	Health	G		12			Health
Dichloroethylene, sym-1,2-	540-59-0	315	Health	G		105			Health
Droperidol	548-73-2	3	Health	G		1			Health
Magnesium stearate	557-04-0	100	Particulate	G		35			Health
Zinc stearate	557-05-1	100	Particulate	G		35			Health
Toluene diisocyanate	584-84-9	1	Health	S		0.5			Health
Calcium cyanide (as total salt)	592-01-8	100	Particulate	G		120			Particulate
Dimethyl disulphide	624-92-0	40	Odour	S			40		Odour
Amyl acetate, secondary	626-38-0					66500			Health and Odour
Amyl acetate, n-	628-63-7					53200			Health and Odour
Ethylene glycol dinitrate	628-96-6	10	Health	G		3			Health
Carbon monoxide1	630-08-0	6000	Health	S		15700 (8 hr average)	36200		(A) see note below
Aluminum tristearate	637-12-7	100	Particulate	G		2180			Health
Dioxolane-1,3	646-06-0	30	Health	G		10			Health
Dimethyl methylphosphonate	756-79-6					875			Health
Ethyl-3-ethoxy propionate	763-69-9	147	Odour	G		50		200	Odour
Propionic acid	79-09-04	100	Odour	G			100		Odour
Hexamethylene diisocyanate monomer	822-06-0	1.5	Health	G		0.5			Health
Decene, 1-	872-05-9	180000	Health	G		60000			Health
Methyl-2-pyrrolidone, N-	872-50-4						40000		Health
Fentanyl citrate	990-73-8	0.06	Health	G		0.02			Health
Hexamethyl disilazane	999-97-3	5	Health	G		2			Health
Borax	1303-96-4	100	Health	G		33			Health
Calcium hydroxide	1305-62-0	27	Corrosion	S		13.5			Corrosion
Calcium oxide	1305-78-8	20	Corrosion	S		10			Corrosion
Ferric oxide	1309-37-1	75	Soiling	S		25			Soiling
Magnesium oxide	1309-48-4	100	Particulate	S		120			Particulate
Potassium hydroxide	1310-58-3	28	Corrosion	G		14			Corrosion
Sodium hydroxide	1310-73-2	20	Corrosion	G		10			Corrosion
Strontium oxide	1314-11-0	100	Particulate	G		120			Particuate
Cresols	1319-77-3	230	Health	S		75			Health
Xylenes	1330-20-7	2300	Odour	S		2300			Odour

Contaminant Name	Point of Impingement (POI) Limit				Ambient Air Quality Criteria (AAQC)				
	Contaminant Code or CAS No.	Half-hour POI Limit ($\mu g/m^3$)	POI Limiting Effect	Status	Annual ($\mu g/m^3$)	24-Hour ($\mu g/m^3$)	1-Hour ($\mu g/m^3$)	10-Minute ($\mu g/m^3$)	AAQC Limiting Effect
Asbestos (fibres > 5 m in length)	1332-21-4					0.04 fibres/cm3			Health
Asbestos (total)	1332-21-4	5	Health	G					
Carbon black	1333-86-4	25	Soiling	S		10			Soiling
Polychlorinated biphenyls (PCBs)	1336-36-3	0.45	Health	G	0.035	0.15			Health
Methyl ethyl ketone peroxide	1338-23-4	250	Health	G		80	200		Health; Health
Aluminum oxide	1344-28-1	100	Particulate	G		120			Particulate
Detergent enzyme (Subtilisin)	1395-21-7	0.2	Health	G		0.06			Health
Penicillin	1406-05-9	0.3	Health	G		0.1			Health
Calcium stearate	1592-23-0	100	Particulate	G		35			Health
Strontium carbonate	1633-05-2	100	Particulate	G		120			Particulate
Methyl tert-butyl ether	1634-04-4	2200	Odour	G		7000			Health
Dodecyl benzene sulphonic acid	1886-81-3	100	Particulate	G		120			Particulate
Paraquat dichloride - respirable	1910-42-5	0.009	Health	G		0.003			Health
Paraquat dichloride - total in ambient air	1910-42-5	0.045	Health	G		0.015			Health
Pimozide	2062-78-4	3	Health	G		1			Health
Dodine	2439-10-3	30	Health	G		10			Health
Sulphur hexafluoride	2551-62-4	1800000	Health	G		600000			Health
Methyl mercapto aniline	2987-53-3			UD					Odour
Butyl benzene sulphonamide, N-	3622-84-2	105	Health	G		35			Health
Hexamethylene diisocyanate trimer	4035-89-6	3	Health	G		1			Health
Tetrabutylurea	4559-86-8	30	Health	G		10			Health
Butoxy-2-propanol, 1-	5131-66-8	9900	Health	G		3300			Health
Sulfamic acid	5329-14-6	100	Particulate	G		120			Particulate
Aluminum stearate	7047-84-9	100	Particulate	G		2180			Health
Lead	7439-92-1	6	Health	S		2			(A) Health
						0.7 $\mu g/m^3$/30 day			(A) Health
Lead - in dustfall	7439-92-1					0.1 g/m^2/30 day			Health
Lithium -other than hydrides	7439-93-2	60	Health	S		20			Health
Manganese compounds (including permanganates)	7439-96-5	7.5	Health	G		2.5			Health
Mercury	7439-97-6	5	Health	S		2			(A) Health
Mercury (as Hg) - alkyl compounds	7439-97-6	1.5	Health	S		0.5			Health
Molybdenum	7439-98-7	100	Particulate	G		120			Particulate

Contaminant Name	Point of Impingement (POI) Limit				Ambient Air Quality Criteria (AAQC)				
	Contaminant Code or CAS No.	Half-hour POI Limit ($\mu g/m^3$)	POI Limiting Effect	Status	Annual ($\mu g/m^3$)	24-Hour ($\mu g/m^3$)	1-Hour ($\mu g/m^3$)	10-Minute ($\mu g/m^3$)	AAQC Limiting Effect
Nickel	7440-02-0	5	Vegetation	S		2			(A) Vegetation
Platinum - water soluble compounds	7440-06-4	0.6	Health	G		0.2			Health
Silver	7440-22-4	3	Health	S		1			Health
Strontium	7440-24-6	100	Particulate	G		120			Particulate
Tin	7440-31-5	30	Health	S		10			Health
Titanium	7440-32-6	100	Particulate	S		120			Particulate
Antimony and compounds	7440-36-0	75	Health	S		25			Health
Arsenic and compounds	7440-38-2	1	Health	G		0.3			(A) Health
Barium - total water soluble	7440-39-3	30	Health	G		10			Health
Beryllium and compounds	7440-41-7	0.03	Health	S		0.01			Health
Boron	7440-42-8	100	Particulate	S		120			Particulate
Cadmium and compounds	7440-43-9	5	Health	S		2			(A) Health
Chromium -di-, tri- and hexavalent forms	7440-47-3	5	Health	G		1.5			Health
Cobalt	7440-48-4	0.3	Health	G		0.1			Health
Copper	7440-50-8	100	Health	S		50			Health
Vanadium	7440-62-2	5	Health	G		2			(A) Health
Zinc	7440-66-6	100		S		120			Particulate
Sulphur dioxide	7446-09-5	830	Health	S	55	275	690		(A) Health and Vegetation
Lithium hydrides	7580-67-8	7.5	Health	S		2.5			Health
Sodium bisulphite	7631-90-5	100	Particulate	G		120			Particulate; Health
Sodium nitrate	7631-99-4	100	Particulate	G		7000			Health
Boron trifluoride	7637-07-2	5		S		2			Vegetation
Zinc chloride	7646-85-7	12	Health	G			10		Health
Hydrogen chloride	7647-01-0	100	Corrosion[e]	S[e]		20			Health
Palladium - water soluble compounds	7657-10-1	30	Health	G		10			Health
Phosphoric acid (as P2O5)	7664-38-2	100	Particulate	S		120			Particulate
Fluorides (as HF) - gaseous -growing season GS	7664-39-3					0.34 $\mu g/m^3$ /30 day			(A) Vegetation
Fluoridation -as total fluorides, total GS	7664-39-3					40 :g/100 cm^2 /30 day			(A) Vegetation
Fluorides (as HF) - total, growing season GS	7664-39-3					0.69 $\mu g/m^3$/30 day			(A) Vegetation
Fluoridation -as total fluorides, total NGS	7664-39-3					80 :g/100 cm^2 /30 day			(A) Vegetation
Fluorides (as HF) - gaseous -growing season GS	7664-39-3	4.3	Vegetation	S		0.86			(A) Vegetation

Contaminant Name	Point of Impingement (POI) Limit				Ambient Air Quality Criteria (AAQC)				
	Contaminant Code or CAS No.	Half-hour POI Limit ($\mu g/m^3$)	POI Limiting Effect	Status	Annual ($\mu g/m^3$)	24-Hour ($\mu g/m^3$)	1-Hour ($\mu g/m^3$)	10-Minute ($\mu g/m^3$)	AAQC Limiting Effect
Fluorides (as HF)- total non-growing season NGS	7664-39-3					1.38 $\mu g/m^3$/30 day			(A) Vegetation
Fluorides (as HF)- total, non growing season NGS	7664-39-3	17.2	Vegetation	S		3.44			(A) Vegetation
Fluorides (as HF) - total, growing season GS	7664-39-3	8.6	Vegetation	S		1.72			(A) Vegetation
Fluorides in dry forage-dry weight	7664-39-3					35 ppm/30 day ave.*			(A) Effects on animals
						80 ppm/30 day ave.**			(A) Effects on animals
						60 ppm/60 day ave.***			(A) Effects on animals
Ammonia	7664-41-7	3600	Odour	S		100			Health
Sulphuric acid	7664-93-9	100	Corrosion	S		35			Corrosion
Nitric acid	7697-37-2	100	Corrosion	S		35			Corrosion
Hydrogen peroxide	7722-84-1	90	Health	G		30			Health
Bromine	7726-95-6	70	Health	S		20			Health
Potassium nitrate	7757-79-1	100		G		120			Particulate
Sodium chlorite	7758-19-2	60	Health	G		20			Health
Stannous Chloride (as Sn)	7772-99-8	30	Health	G		10			Health
Sodium chlorate	7775-09-9	18	Health	G		6			Health
Selenium	7782-49-2	20	Health	G		10			Health
Chlorine	7782-50-5	300	Interim	S		10		230	Health; Odour
Hydrogen sulphide	7783-06-4	30	Odour	S			30		(A) Odour
Arsine	7784-42-1	10	Health	S		5			Health
Phosphine	7803-51-2	30	Health	G		10			Health
Silane	7803-62-5	450	Health	G		150			Health
Coal tar pitch volatiles - soluble fraction	8007-45-2	3	Health	G	0.2	1			Health
Nitrous oxide	10024-97-2	27000	Health	G		9000			Health
Phosphorus oxychloride	10025-87-3	40	Health	G		12			Health
Phosphorus pentachloride	10026-13-8	30	Health	G		10			Health
Ozone	10028-15-6	200	Health	S			165		(A) Health and Vegetation
Hydrogen bromide	10035-10-6	800	Health	G			668		Health
Boric acid	10043-35-3	100	Health	G		33			Health
Chlorine dioxide	10049-04-4	85	Health	S		30			Health
Nitrogen oxides'	10102-44-0	500	Health	S		200	400		(A) Health; Health
Boron tribromide	10294-33-4	100	Corrosion	S		35			Corrosion
Boron trichloride	10294-34-5	100	Corrosion	S		35			Corrosion

Contaminant Name	Point of Impingement (POI) Limit				Ambient Air Quality Criteria (AAQC)				
	Contaminant Code or CAS No.	Half-hour POI Limit ($\mu g/m^3$)	POI Limiting Effect	Status	Annual ($\mu g/m^3$)	24-Hour ($\mu g/m^3$)	1-Hour ($\mu g/m^3$)	10-Minute ($\mu g/m^3$)	AAQC Limiting Effect
Methylcyclopentadienyl manganese tricarbonyl (MMT)	12108-13-3	30	Health	G		10			Health
Ammonium chloride	12125-02-9	100	Particulate	G		120			Particulate
Nickel carbonyl	13463-39-3	1.5	Health	S		0.5			Health
Titanium dioxide	13463-67-7	100	Health	G		34			Health
Tellurium - excluding hydrogen telluride	13494-80-9	30	Health	S		10			Health
Silica -respirable (<10 um diameter), cristabolite	14464-46-1	15	Health	G		5			Health
Talc - fibrous	14807-96-6	5	Health	G		2			Health
Silica -respirable (<10 um diameter), quartz	14808-60-7	15	Health	G		5			Health
Iron - metallic	15438-31-0	10	Soiling	S		4			Soiling
Silica -respirable (<10 um diameter), tridymite	15468-32-3	15	Health	G		5			Health
Decaborane	17702-41-9	50	Health	S		25			Health
Strontium hydroxide	18480-07-4	100	Particulate	G		120			Particulate
Diborane	19287-45-7	20	Health	S		10			Health
Pentaborane	19624-22-7	3	Health	S		1			Health
Miconazole nitrate	22832-87-7	15	Health	G		5			Health
Polychloroprene	25267-15-6	100		G		500			Particulate
Octene, 1-	25377-83-7	150000	Health	G		50000			Health
Tolmetin sodium	35711-34-3	15	Health	G		5			Health
Methoxy-1-propyl acetate,2-	70657-70-4	4600	Health	G		1530			Health
Oxo-hexyl acetate	88230-35-7	255	Health	G		85			Health
Oxo-heptyl acetate	90438-79-2	255	Health	G		85			Health
Chlorinated dibenzo-p-dioxins (CDDs) (See Table 1)	N/A	15 pgTEQ/m^3	Health	G		5 pgTEQ/m^3			Health
Suspended particulate matter < 44 µm aero. dia.	N/A	100	Visibility	S	60++	120			(A) Visibility
Dustfall	N/A	8000 ($\mu g/m^2$)	Soiling	S	4.6 g/m^2 + (annual)	7 g/m^2 (30 day)			(A) Soiling
Milk powder	N/A	20	Soiling	S		20			Soiling and Odour
Fluorinert 3M-FC-70	N/A	100	Particulate	G		120			Particulate
Whey powder	N/A	100	Particulate	G		120			Particulate
Polybutene -1-sulphone	N/A	100	Particulate	G		120			Particulate
Bromochlorodifluoromethane (Halon 1211)	N/A	see	"Part VI/EPA"						Ozone depleting
Alkyltoluene sulphonamide, N-	N/A	100		G		120			Particulate
Mineral Spirits [2]	N/A	7800	Health"	S"		2600			Health
Tripropyltin methacrylate	N/A	3	Health	G		1			Health

Contaminant Name	Point of Impingement (POI) Limit				Ambient Air Quality Criteria (AAQC)				
	Contaminant Code or CAS No.	Half-hour POI Limit (µg/m³)	POI Limiting Effect	Status	Annual (µg/m³)	24-Hour (µg/m³)	1-Hour (µg/m³)	10-Minute (µg/m³)	AAQC Limiting Effect
Total reduced sulphur (as hydrogen sulphide)	N/A	40	Odour	G			40		Odour

TERMS:

[1] = Carbon monoxide AAQC is for an 8-hour average based on high background levels from automobiles

[2] = Mineral spirits are petroleum distillate mixtures of C_7-C_{12} hydrocarbons, with boiling points ranging from 130-220 °C and flash points ranging from 21-60 °C. Please see Rationale document: "Ontario Air Standards for Mineral Spirits" for further detail.

[3] = NOx (Nitrogen Oxides) are assumed to be the sum of nitrogen dioxide and nitrogen monoxide. AAQC's are based on nitrogen dioxide.

S = Air Quality Standard, **G** = Guideline, **CARC** = Carcinogen, **UD** = Under Development, or odour threshold review.

A = AAQC Chemicals listed in Regulation 337 (formerly Regulation 296) under the Environmental Protection Act.

Part VI/EPA = "Part VI/EPA" refers to Part VI of the Ontario Environmental Protection Act R.S.O. 1990, C. E-19, which addresses the manufacture, use, storage, disposal, etc., of ozone depleting substances.

N/A = Not Available

GS = Growing Season — May 1 - September 30- Northern Ontario, Mid-Ontario & N Regions; April 1 - October 31 - Southern Ontario, SW, WC, E & C Regions

NGS = Non Growing Season — October 1 - April 30 - Northern Ontario, Mid Ontario & N Regions; November 1 - March 31 - Southern Ontario, SW, WC, E & C Regions.

* average monthly results for growing season.

** average results for any single month.

*** average of 2 consecutive months.

♦ = arithmetic mean, ♦♦ = geometric mean

[#] = Status of Standard/Guideline is interim, pending the outcome of the Risk Management (RM) Framework for Air Standards (currently under development). See Table 3 for list of pending future Effects-based limits.

Table 3[#] - Future Effects-based POI limits with current interim values subject to RM Framework for Air Standards (currently under development)

Contaminant Name (µg/m³)	Contaminant CAS No.	Future Effects-based POI Limit	Limiting Effect
Acrylonitrile	107-13-1	1.8	Health
Ammonia	7664-41-7	300	Health
Chlorine	7782-50-5	30	Health
Chloroform	67-66-3	3	Health
Ethyl benzene	100-41-4	1400	Odour
Ethyl ether	60-29-7	700	Odour
Hydrogen chloride	7647-01-0	60	Health
Methyl ethyl ketone (2-Butanone)	78-93-3	3000	Health
Methylene chloride	75-09-2	660	Health
Mineral spirits	N/A	3000	Odour
Perchloroethylene	127-18-4	1080	Odour
Propylene oxide	75-56-9	4.5	Health
Trichloroethylene	79-01-6	350	Health